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- 1. A method of manipulating an optical signal, comprising the steps of:
  - a) splitting the optical signal into a first signal and a second signal,
  - b) using the second signal as a signal undelayed with respect to the optical signal,
  - c) delaying the first signal with respect to the second signal,
  - d) splitting the first signal into a first and a second part,
  - e) using the second part of the first signal as a delayed signal, and
  - f) repeating steps a)- d) with the first part of the first signal.
- 2. The method of claim 1, further comprising delaying the first signal by letting the first signal travel a different path than the second signal.
- 3. The method of claim 1, wherein the ratio of the first and the second part has a range of between 5:95 and 50:50.
- 4. The method of claim 1, further comprising performing all splitting operations at the same splitting point.
- 5. A method of determination of properties of an optical device under test, comprising the steps of:

splitting an initial light beam into a measurement beam and a reference beam of an interferometer,

coupling the measurement beam into the optical device under test,

letting the reference beam travel a different path as the measurement beam by manipulating the reference beam according to the method of claim 1.

superimposing the reference beam and the measurement beam to produce interference in a resulting superimposed light beam,

detecting the power of the resulting superimposed light beam as a

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function of frequency when tuning the frequency of the initial light beam from a minimum to a maximum of a given frequency range, and

deriving optical properties of the device under test from the frequency dependency of the detected powers.

- A software program or product stored on a data carrier for executing the method of claim 1, when run on a data processing system such as a computer.
- 7. An apparatus for manipulating an optical signal, comprising:

a first splitting device for splitting the optical signal into a first signal and a second signal,

a delaying device for delaying the first signal with respect to the second signal so that the second signal can be used as a signal undelayed with respect to the optical signal,

a second splitting device for splitting the first signal into a first and a second part, so that the second part of the first signal can be used as a delayed signal, and

a repeating device for providing the first part of the first signal to the first splitting device.

- 8. The apparatus of claim 7, wherein the first and the second splitting devices are identical.
- 9. The apparatus of claim 7, wherein the splitting devices comprise a beam splitter or coupler .
- 10. The apparatus of claim 7, wherein the delaying device is a loop connected with the splitting devices.
- 11. The apparatus of claim 7, wherein the delaying device and the repeating device are identical.

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12. An apparatus for determination of properties of an optical device under test, comprising:

a first beam splitter for splitting an initial light beam into a measurement beam and a reference beam of an interferometer,

a connecting device for coupling the measurement beam into the optical device under test,

an apparatus for manipulating an optical signal according to claim 7 for letting the reference beam travel a different path as the measurement beam,

a second beam splitter for superimposing the reference beam and the measurement beam to produce interference in a resulting superimposed light beam,

a detector for detecting the power of the resulting superimposed light beam as a function of frequency when tuning the frequency of the initial light beam from a minimum to a maximum of a given frequency range, and

a processing unit for deriving optical properties of the device under test from the frequency dependency of the detected powers.